STATEMENT OF WORK AND KEY PERFORMANCE PARAMETERS HANDBOOK

Guidance for Capital Asset Acquisition Projects

Office of Acquisition and Project Management
U.S. Department of Energy
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FOREWORD

This handbook was developed by the Department of Energy (DOE) Office of Acquisition and Project Management (OAPM) for use on DOE capital asset projects by federal project directors (FPDs) and contractors. It provides suggested guidance and best practices for developing a complete statement of work (SOW) in support of contracts for capital asset projects, and the development of key performance parameters (KPPs) for capital asset projects within DOE.

This handbook is not a requirements document. It is intended to provide a consistent approach based on best practices to support the development of comprehensive and effective SOWs and KPPs for capital asset projects. DOE programs could further issue more specific/applicable guidance tailored to their particular needs. DOE programs may also use alternate methodologies or tailored approaches more suitable to their projects and technologies, as appropriate. This handbook is not a DOE Guide, and not subject to the directives review process, but is issued primarily to allow more flexibility in the review and settlement of issues that may arise as the handbook is initially used by the DOE programs, FPDs and contractors. The handbook could eventually lead to the development of a unique DOE Guide or as an appendix to an existing guide, if found appropriate and justified.

This handbook will be revised or augmented periodically with pertinent data that may be useful in improving its utility. Comments (i.e. suggested additions or deletions) should be forwarded to the Office of Project Management, MA-63; attention: Melvin Frank and Ruben Sanchez, ruben.sanchez@hq.doe.gov.

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SECTION 1.0: INTRODUCTION

1.1 Overview

The execution of capital asset projects within the originally approved scope, cost and schedule baseline remains a priority within the Department of Energy (DOE). Achieving this objective for capital asset projects under the DOE acquisition contract process requires clear and concise statements of work (SOWs) and robust key performance parameters (KPPs). This is needed to support efficient and effective performance-based contracts.

The SOW provides the specification upon which project execution plans, and cost and schedule estimates are based for DOE capital asset acquisition projects. Accordingly, its elements must be unambiguous and well-documented. In short, the SOW should indicate precisely what results the government expects. KPPs are the critical performance goals in DOE capital asset projects. They are vital to the integrated project team (IPT) and critical decision (CD) processes, and represent a foundational element within the original project performance baseline (PB).

This handbook will assist DOE personnel and contractors in developing SOWs and establishing KPPs for capital asset acquisitions under their cognizance based on mission need, commensurate with project goals, compliant with DOE requirements, and consistent with applicable guidance.

1.2 Background

The SOW describes in clear, understandable terms the work to be done in developing or producing the products to be delivered or services to be performed by a contractor. It defines the contractual effort to be performed, including the overall schedule and deliverables. This information is used to help establish a work breakdown structure (WBS) and the accompanying WBS dictionary that captures all project components through completion. The WBS is a direct representation of the work scope defined in the SOW, and is an essential element of an Earned Value Management System (EVMS).

KPPs, as required by DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets,* define a characteristic, function, requirement or design basis that, if changed, would have a major impact on the system or facility performance, schedule, cost and/or risk for the project.[1]

Collectively, SOWs and KPPs are essential to capturing scope and developing and maintaining a PB. The SOW applies to the development of the contract scope and the performance measurement baseline (PMB). KPPs are measurable project goals captured in the project PB which, when demonstrated at CD-4, are one of the determinant factors of project success.

[1] For National Nuclear Security Administration (NNSA) projects, KPPs also need to be identified in the Program Requirements Document (PRD) at CD-0 in preliminary form until finalized at CD-2.

1.3 SOW and KPPs in Relation to Project Costs

Figure 1 illustrates the relationship of the SOW and KPPs to project costs. The SOW is reflected in the PMB. The PMB is the contractor's budgeted cost to complete the work. Management reserve (MR) and fee are not included in the PMB. The contract price comprises the contract budget base (CBB) and the contractor's fee.

In contrast, KPPs are associated with total project cost (TPC), which is the cost component of the PB. The TPC includes three distinct cost elements from both the contractor and the DOE—the contract price, DOE other direct project costs, and DOE contingency. Further explanation of PMB and PB may be found in various Departmental directives and guides, including DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets* (dated 11-29-2010), DOE G 413.3-5A, *U.S. Department of Energy Performance Baseline Guide* (dated 9-23-2011), and DOE G 413.3-20**,** *Change Control Management Guide (*dated 7-29-2011).

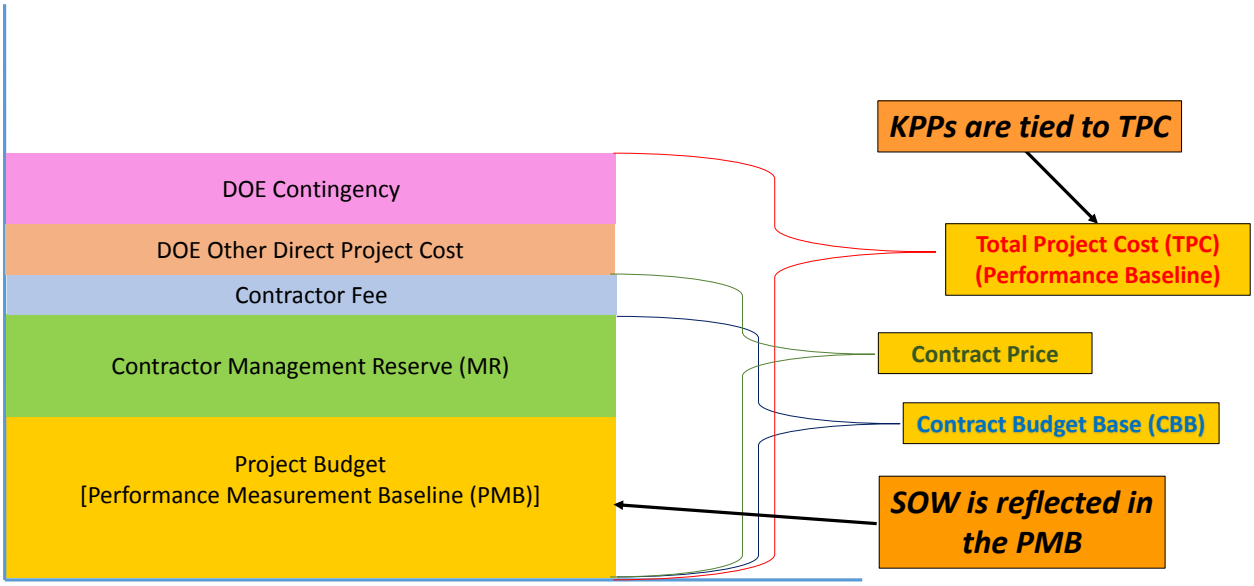

Figure 1. Relationship of SOW and KPPs to Project Costs

1.4 Scope and Objective

This handbook is limited to providing guidance only for developing SOWs and KPPs for DOE capital asset projects. It focuses on how to develop SOWs and KPPs to help ensure that project scope is defined in a manner that permits accurate assessment of project performance.

The objective of this handbook is to provide succinct and applicable guidance for developing SOWs and KPPs consistent with requirements contained in DOE Order 413.3B, and accompanying relevant guides. SOWs and KPPs are tied to guidance documents addressing a wide range of topical areas, including cost estimating, work breakdown structure (WBS), project reviews, PMB, technology readiness, project definition rating index, project completion/closeout, integrated project team (IPT), and systems engineering.

SOWs help define the PMB through clear and comprehensive description of the work to be performed by the contractor, while KPPs are indicators of overall project success. SOWs provide a basis for the PMB and WBS, and are the benchmark used during project reviews and at project closeout/completion. Consequently, ensuring that SOWs and KPPs are clearly defined, well understood, and are appropriate is vital to realizing expected project performance for success.

SECTION 2.0: STATEMENT OF WORK DEVELOPMENT

2.1 Purpose of Statement of Work

The purpose of an SOW is to provide a formal narrative description of products or services to be supplied by a contractor based on mission need. The SOW should specify in clear, understandable terms the work to be done in developing or producing the goods to be delivered or services to be performed by a prime contractor and/or multiple contractors. The SOW should be individually tailored to consider the period of performance, deliverable items, if any, and the desired degree of performance flexibility. The SOW establishes the basis for key performance baseline elements, including the WBS, schedule and cost estimate.

2.2 Defining the Statement of Work

Preparation of an effective SOW requires a thorough understanding of the products and services needed to satisfy a particular requirement. SOW helps define a PMB for a project. An explicitly written SOW also facilitates effective contractor evaluation. A good SOW exhibits the following characteristics:

- Clear and concise high level definition of scope of work to be performed.
- Defines performance requirements that define the work in measurable, mission-related terms.
- Descriptive and not prescriptive, i.e., what is to be done, not how; results-oriented.
- The SOW becomes a standard for measuring contractor performance, and will likely form the basis for specific contractual language.
- Limits the opportunities for contractor scope creep.

2.2.1 Relationship between Statement of Work and Specification

The SOW defines (either directly or by reference to other documents) all work performance requirements for the contractual effort. Qualitative and quantitative design and performance requirements are contained in technical specifications. Such specifications are typically referenced in the SOW. For example, the referenced specification may cite reliability and maintainability requirements in terms of quantifiable mean-time-between failures (MTBF) and mean-time-to-repair (MTTR); however, the SOW should task the contractor to establish, implement, and control a reliability and maintainability program in accordance with an industry standard or attached specification.

2.2.2 Relationship between Statement of Work and Work Breakdown Structure (WBS) Alignment

A WBS is the government-approved structure for the contract scope reporting level and any discretionary extensions to lower levels for reporting or other purposes. It includes all SOW

elements (hardware, software, data, or services) for which the contractor is responsible. The WBS includes the contractor's scope logically organized into control accounts, work packages, planning packages, and specific activities, in accordance with government direction and the contract SOW. This comprehensive WBS forms the framework for the development of the contractor's PMB and management control system. The WBS is a direct representation of the work scope defined in the project SOW. The WBS is an essential element of an Earned Value Management System (EVMS) used to provide the structure for identifying and categorizing the work to be performed.

Linkage among the SOW, WBS, PMB, and resource-loaded schedule (RLS) provides specific insights into the relationship among scope, schedule, budget, and performance. This relationship allows all items to be tracked to the same WBS elements.

It is important to coordinate the development of the project WBS with the SOW to ensure consistency in document structure. The WBS should address all requirements of the contractor SOW. It should also provide a logical arrangement of SOW elements, serving as a convenient checklist to ensure the contractor addresses all necessary project elements and meets specific contract reporting needs.

The contract SOW tasks, contract specifications, and contractor responses should be expressed in terms of the WBS to enhance its effectiveness in satisfying the objectives of the particular acquisition. The relationship of the contract SOW to the WBS elements should be readily traceable.

2.2.3 Relationship between Statement of Work and Contract

The SOW should be compatible with the following provisions:

- Requirements that are mandated by law, established DOE policy or necessary for effective management of its acquisition, operation, or support.
- Fulfill or satisfy the mission need.
- System-level requirements should be specified in terms of mission-performance, operational effectiveness, and operational suitability at the outset of development.
- State management requirements in terms of results needed rather than "how to manage" procedures for achieving those results during all acquisition phases, solicitations and contracts.

The SOW is one key element used to select contract type. The level of detail, clarity, and identification of performance objectives and expectations in the SOW contribute to all other conditions of the contract, from pricing structure to the contractor's entitlement to payment, to the level of contract administration. The greater the degree to which the DOE can articulate its needs accurately and clearly, the greater the likelihood that the contractor will accept greater performance and cost risk associated with a particular type of contract. A well-articulated, detailed SOW also minimizes the risk of scope creep, which is a major problem with DOE projects. The tighter the SOW, the less latitude the contractor has for misinterpretation.

Ultimately, this leads to a greater likelihood the project can be completed on budget, and also creates a better working relationship between DOE and the contractor.

Upon contract award, the SOW should be reflected within the WBS and WBS dictionary, PMB, and RLS. If the associated tasks and schedule are adequately represented within the RLS, then the RLS and the earned value data metrics component of the contractors' EVMS become better indicators of contractor performance.

2.3 SOW Written Format

The SOW is intended to be an explicit statement of the tasks to be done. Examples of SOWs vary, with some consisting of only one to two pages, while others are ten pages or more. Although there is no fixed format, there are basic elements that should be addressed in any SOW. A good SOW should try to include the following sections:

- SOW Section Title
- Scope
- Applicable Documents
- Requirements

Scope

The scope describes what work is to be completed. It may outline the phases of the project and establish limits in terms of technical objectives, time, or any other provisions or limitations. The scope should also describe the desired end result of the project.

Besides describing what it is the contractor is expected to do, certain distinctive elements of information should be included in the SOW, including:

- *Statement of Mission Need.* A brief description and background of the capability gap(s) to be filled, and a succinct discussion of the need giving rise to this requirement.
- *System description.* A short functional description of the overall system is helpful. If practicable, a pictorial representation that will quickly orient the reader to the desired system and the proposed use should be considered for inclusion in this section of the SOW.
- *Major milestones.* A listing or graphic display of major project milestones may be included

Applicable Documents

Cite/invoke the applicable documents, reports, and other material that have an impact on the project. These documents may include standards or specifications, DOE orders, regulatory and technical requirements, and other referenced documents needed to identify and clarify the work task or deliverable product. The exact version of any document cited should be specified.

DOE G 413.3-13, *DOE Acquisition Strategy Guide for Capital Asset Projects*, is a good resource and reference to use when preparing an SOW. It is a tool for federal project directors (FPDs) and Integrated Project Teams (IPTs) to use in developing a project acquisition strategy document. It also references other specific federal regulations and guidance, including:

- FAR Part 7, Acquisition Planning
- FAR 34.004, Acquisition Strategy (Major System)
- FAR 37.6, Performance-Based Contracting

Technical Tasks/Requirements

Specific contractor work tasks are described to satisfy program needs. These work tasks expand and clarify the general scope described in Section 1.

2.4 SOW Development Approach

A systematic process is essential to SOW development. Select a competent team (expert in managerial, technical and contractual fields) with a team leader who is experienced in systems acquisition and SOW development. The SOW preparer and all contract section authors must first understand all program requirements to be supported. The team should:

- Ensure that only those tasks which add value to the product, whether a management system or technical requirement, are included in the SOW.
- Conduct market research to determine whether commercial items or non-developmental items are available to meet program requirements.
- Review the requirements documents which authorize the program and define its basic objectives.
- Review the various requirements documents for program management, acquisition and control impact.
- Prepare a bibliography citing the specific portions of the applicable governing instructions, directives, specifications, and standards with which the program must comply to meet the project objectives. Keep these requirements to the minimum necessary to meet the needs of the planned procurement and do not include citations that direct "how" work is to be performed.
- Categorize the work described to outline scope ownership to make clear what needs to be contracted out and form the basis of the SOW.
- Compile all work that needs to be contracted into an Acquisition Plan (if applicable) that will identify the various RFPs/contracts required, type of contract, the time-phasing, estimated cost, method of contractor selection/award, and period of performance. For each RFP/contract so identified, an SOW should be prepared covering all of the WBS work elements included in that RFP/contract.

- Identify all organizations and persons who will participate in preparing the SOW, and determine the participants' areas of responsibility.
- For each WBS work element, identify tasks that define the scope of the work effort to satisfy the minimal needs of the program and identify required data deliverables.
- Ensure that the specifications are consistent with the SOW. Ensure technical performance requirements are properly contained in the system specification and not in the SOW.

Developing an SOW is an iterative process. There are likely to be several iterations accomplished during initial preparation by the DOE until a final SOW is provided to a contractor for execution. Similarly, once provided to a contractor for execution, there may be occasion to revise the SOW. This dynamic process is depicted generically in Figure 2 (as it excludes the process for contractual SOW revision mid-execution, including contract renegotiation).

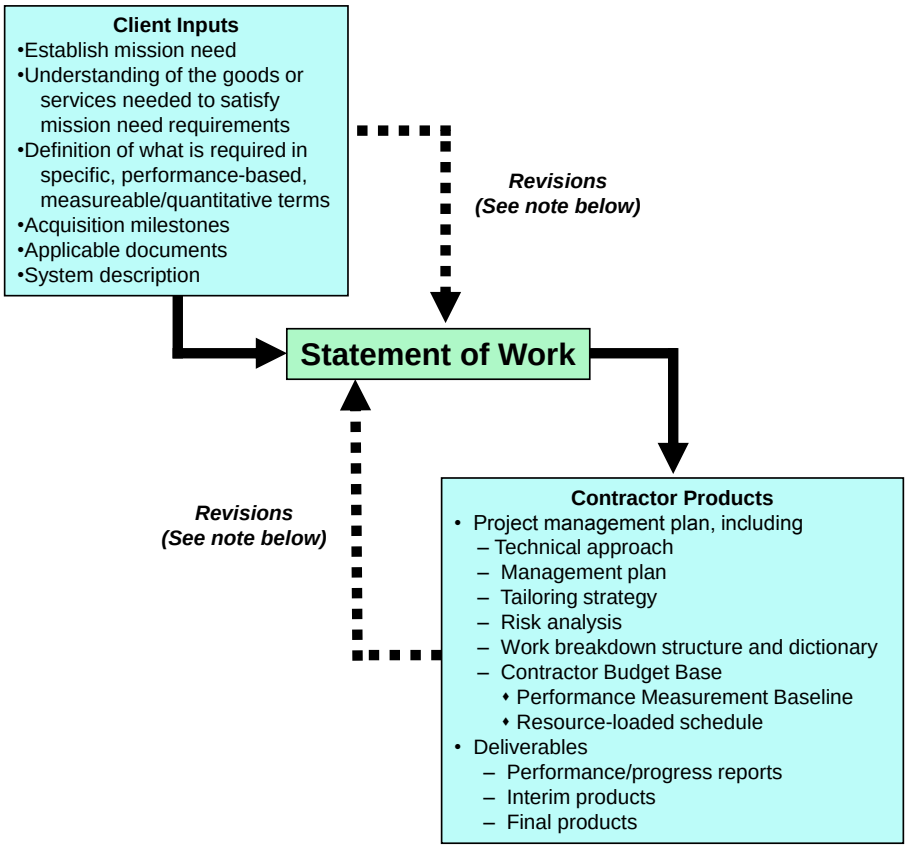

Figure 2. Dynamic Process of SOW Development

Note: Revisions to the Contractual Statement of Work May Require Contract Renegotiation Using Project/Contract Change Control Process

SECTION 3.0: KEY PERFORMANCE PARAMETER DEVELOPMENT

3.1 Purpose of a Key Performance Parameter

The purpose of a KPP is to establish a measurable benchmark for completing project scope.[2] It identifies a characteristic, function, requirement or design basis that, if changed, would have a major impact on the system or facility performance, schedule, cost and/or risk. Further, a KPP is a discrete quantitative objective that can be tracked during project execution. Collectively, KPPs provide a checklist for project completion and a metric for success. They should define the measurable criteria that meet the mission need.

3.2 Defining a Key Performance Parameter

The requirement to establish KPPs is a prominent feature of DOE project management—they are finalized at CD-2. KPPs embody the critical attributes of a project mission. DOE O 413.3B defines KPPs as follows:

> "KPPs are a vital characteristic, function, requirement or design basis, which if changed, would have a major impact on the facility or system performance, scope, schedule, cost and/or risk, or the ability of an interfacing project to meet its mission requirements. A parameter may be a performance, design, or interface requirement. Appropriate parameters are those that express performance in terms of accuracy, capacity, throughput, quantity, processing rate, purity, reliability, sustainability, or others that define how well a system, facility or other project will perform."[3]

The following additional general guidance is established to support the development of KPPs:

- Collectively, the KPPs should define the boundaries that comprise the scope of the project.
- KPPs should be identified during the concept development phase and finalized before CD–2. They define the capability that must be delivered, generally measured in terms of quantity, quality, coverage, timeliness or readiness.
- During project requirements development and analysis, performance requirements will be developed across all identified functions based on system life cycle factors and characterized in terms of degree of certainty in their estimate, degree of criticality to system success, and relationship to other requirements.

[2] It should be made clear that the KPPs are project specific and the SOW is contract specific. There may be KPPs which are not in the contractor's SOW (e.g., may be self-performed by DOE or may be under a separate contract, within the project).

[3] DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, 11/29/2010; Attachment 2, P.8.

The minimum KPPs and facility mission should stay intact for the duration of the project since they represent a foundational element within the original PB. In some cases, a minimum KPP or threshold value should be highlighted for CD-4 (project completion), realizing in many instances full operational capabilities may take years to achieve.

3.3 Identifying Key Performance Parameter Characteristics

The quality of a good KPP can be measured by the following characteristics (the SMART test):

- **S** = Specific: clear and focused to avoid misinterpretation.
- **M** = Measurable: can be quantified and compared to other data.
- **A** = Attainable: achievable, reasonable, and credible under conditions expected.
- **R** = Realistic: fits into the project's constraints and is cost effective.
- **T** = Timely: achievable within the time frame given.

Sample measurable characteristics that might be used to define the project KPPs are provided in Table 1.

Table 1. Sample Measurable Characteristics

Performance Characteristics	Scope Characteristics
• Quality (e.g. waste form or waste content) • Quantity (e.g. gallons treated) • Throughput rate • Radiation level • Energy output • Accuracy • Cleanup standard (e.g. parts per billion)	• Size (e.g. square feet, floors) • Number of processing trains • Storage capacity • Boundary or tie-in point • Code requirement (e.g. NQA-1) • Number of wells • Extent of demolition • Disposal location

3.4 Establishing Key Performance Parameter Values

KPPs sometimes are defined in terms of what is desired and what is required. Each KPP states the desired objective value and the associated minimum threshold value succinctly and in quantitative terms, if possible. The *objective value* is the desired performance that the completed asset should achieve, whereas the *threshold value* is more conservative, representing the minimum acceptable required performance that an asset must achieve.

Objective values are related more to project performance—e.g., something similar to a stretch goal that a project might like to achieve. Objective values reflect a normative condition, as they are "nice to have" or "should have". Threshold values, in contrast, typically form the basis for the minimum acceptable performance requirement to meet at CD-4.

The objectives and thresholds form the boundary conditions within which the project must be managed to completion—striving to meet the objectives, but achieving at least the minimum thresholds. Flexibility and project efficiencies can be used to balance the minimum

performance, scope, cost, and schedule requirements. For example, performance might be adjusted in order to control cost or schedule, without jeopardizing the overall mission. However, trade-offs must never compromise the threshold values, which are the minimum required to meet the mission and form the essence of the commitment to Congress.

3.5 Determining the Appropriate Number and Specificity of Key Performance Parameters

The total number of KPPs should be the minimum number needed to characterize the major drivers of project performance. Early in the project planning development phase, the KPPs should reflect broadly defined measures of effectiveness or measures of performance to describe needed capabilities. As a project matures, system-level requirements may provide a better basis for establishing KPPs. KPPs must be specifically defined at CD-2 as per DOE O 413.3B.

Based on a review of many DOE projects from all project offices, three to six KPPs should be adequate to define the performance expectations and deliverables of the project at CD-2. However, use the number of KPPs that are needed to characterize the major drivers, performance, and deliverables. The number and specificity of key performance parameters may change as the project matures over time, although if they change after CD-2 approval, a formal baseline change is typically required and the contract may need to be re-negotiated.

KPPs not only define the technical performance of the ultimate project deliverable (e.g., site end-state, facility capability), they also play a significant role in driving PB development and establishing measures for formal baseline change control.

3.6 Key Performance Parameters and Critical Decisions

KPPs are key elements in the critical decision process, and are inherent in establishing the initial PB and subsequent changes thereto. The timeline for various types of KPPs during project execution is shown in Figure 3. The roles of KPPs are summarized in Table 2. In the initiation phase, preliminary KPPs are used to describe and communicate the mission need to project stakeholders. At CD-2 primary KPPs are defined, understood, and agreed to by the acquisition executive (AE), program sponsor, and federal project director (FPD), and form the requirements established in the PB. Accordingly, there should be more discrete KPPs based on the selected alternative. Without clear scope, cost, or schedule targets in performance baselines, it becomes difficult to assess project performance. More information on the relationship of KPPs to Critical Decisions may be found in DOE G 413.3-5A, *US Department of Energy Performance Baseline Guide*, September 23, 2011.

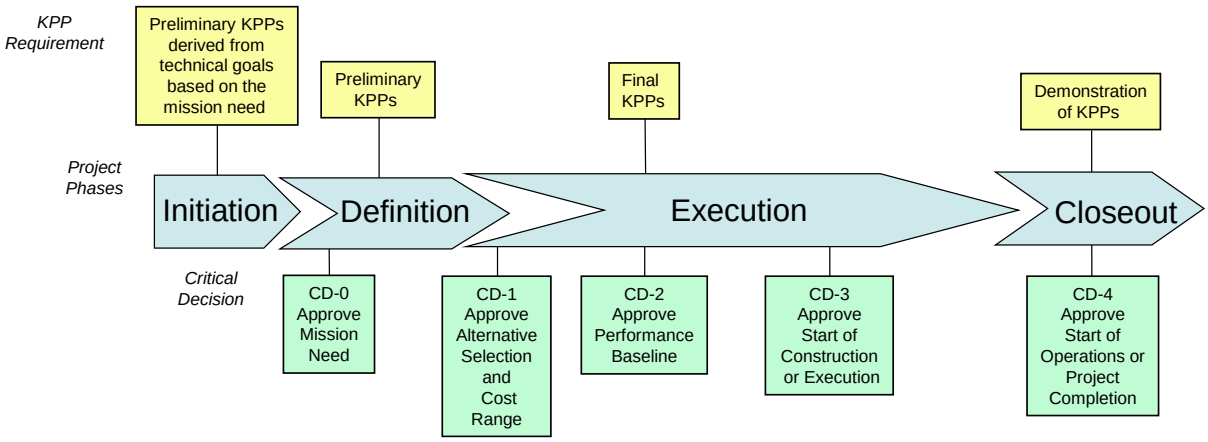

Figure 3. Types of KPPs in the Project and Critical Decision Phases

Table 2. Roles of KPPs in the Project and Critical Decision Phases

Project Phase/Critical Decision Phase			
CD-0/CD-1		CD-2/CD-3	CD-4
Initiation	**Definition**	**Execution**	**Closeout**
Preliminary KPPs - used to describe and communicate the mission need to project stakeholders	Preliminary KPPs - more discrete KPPs based on the selected alternative - informal configuration management of key baseline parameters begins	Final KPPs – a finalized technical baseline, work scope, and KPPs are created, and final cost and schedule baselines are established	Demonstration of KPPs - KPPs serve as a basis for assessing, verifying, and documenting completion of the project

Presented in Figure 4 is an example of the evolution of KPPs for the construction of a new research building. As a project matures, the KPPs evolve from very general parameters at project outset to more specific parameters at CD-2/3, which can be measured and verified at project completion. Appendix A contains examples of good, measurable KPPs for a variety of potential DOE projects, as well as some vague, poor examples of KPPs that have been observed.

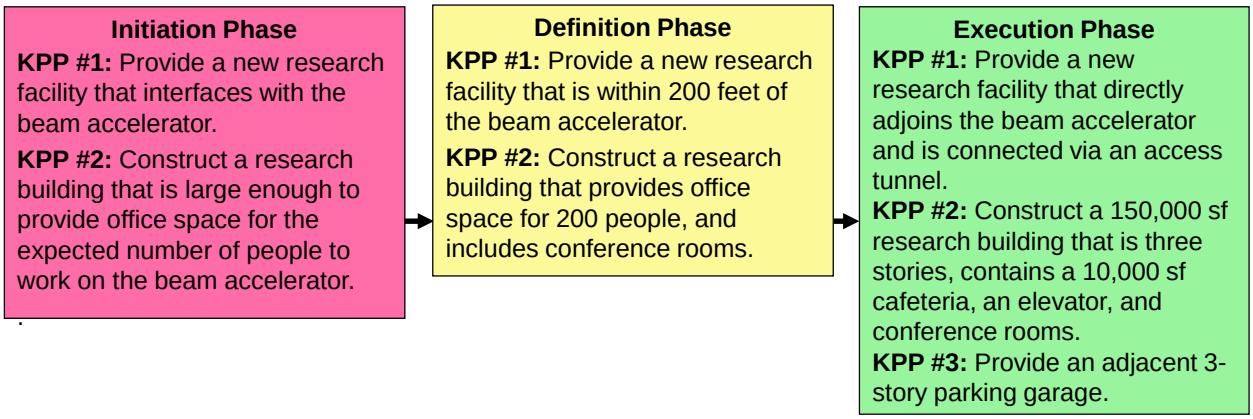

Figure 4. Evolution of Key Performance Parameters

SECTION 4.0: KPP DOCUMENTATION AND CHANGE CONTROL

4.1 Overview

KPPs are integral to the PB approved at CD-2. Adjustments to the KPPs after CD-2 may have a significant impact to the project TPC, scope and schedule, and consequently are subject to the project change control process. It is imperative that the KPPs are in alignment with the project PB (alignment in this case means that project KPPs are achievable within the corresponding approved PB for the project). This information should be well-documented and maintained using configuration management control principles to ensure that the current project state is accurately reflected in all relevant documentation.

4.2 Documentation of Key Performance Parameters

KPPs are documented in the PEP and project data sheets (PDSs), and are captured in the Project Assessment Reporting System (PARS II). The PEP includes required KPPs that are documented as per guidance contained in DOE G 413.3-15, *Department of Energy Guide for Project Execution Plans*. PEPs, PDSs and PARS II document the required KPPs that are required to be achieved at CD-4. They may be preliminarily identified at CD-0, are more mature at CD-1 with the preliminary PEP (PPEP), and are finalized at CD-2 with the formal PEP. Revisions to KPPs after CD-2 approval are documented with the introduction of an approved performance baseline change proposal (BCP).

4.3 Revising Key Performance Parameters

KPPs are maintained throughout the CD process. A BCP is required for any change to a project that affects its ability to satisfy the mission need or does not meet the approved PB. Requirements for the project change control process, and accordingly KPPs, are contained in DOE O 413.3B and addressed in DOE G 413.3-20, *Change Control Management Guide*. The latter document provides a suggested framework that integrates contract change management processes in accordance with the Federal Acquisition Regulation (FAR) and the Department of Energy Acquisition Regulation (DEAR). As a living document, the PEP contains the final minimum KPPs that are required to (1) accurately reflect project performance characteristics at CD-2 that must be demonstrated at CD-4, and (2) be updated consistent with BCPs and the accompanying impact on project performance. Any changes to performance (i.e., KPPs) for projects with a TPC greater than or equal to $10M are required to be documented in PDSs and entered into PARS II. This is illustrated in Figure 5.

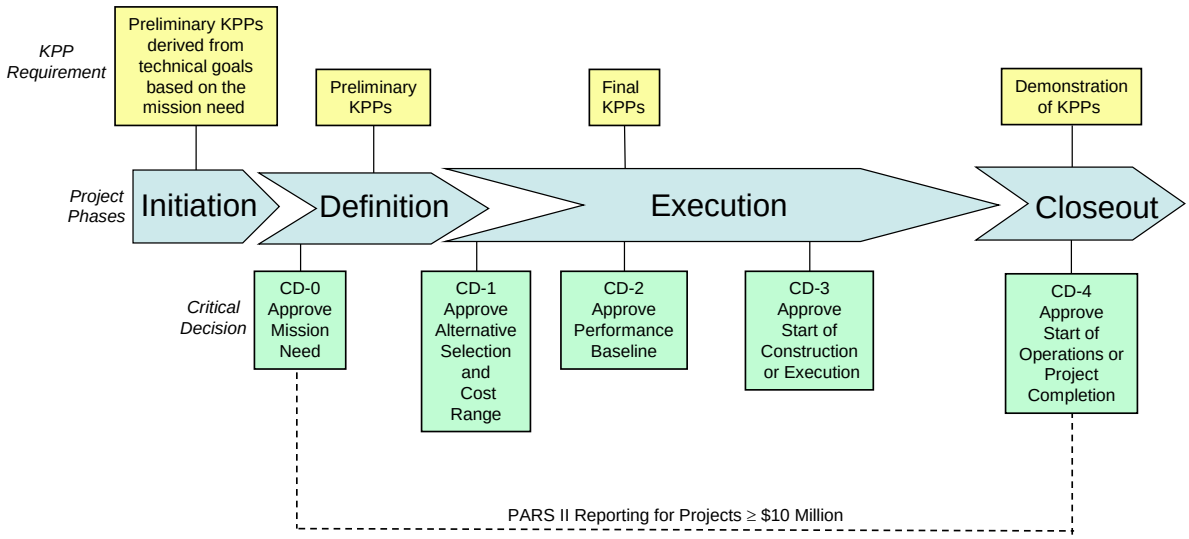

Figure 5. Updating and Reporting of Key Performance Parameters

APPENDIX A: KEY PERFORMANCE PARAMETERS EXAMPLES

Following are examples of the KPPs that might be written for various types of capital asset projects. Remember that KPPs should reflect parameters that are measurable at CD-4, when the project is turned over to operations. KPPs should not be written for an event or condition that occurs at some time after CD-4.

Facility Construction (e.g., office building)

KPP #1. The facility will be a 3-story Class A office building providing 250,000 sf of usable space.

KPP #2. The facility will provide a Class A office building that meets the minimum certification requirements for LEED™.

KPP #3. Provide a facility that includes a cafeteria of a minimum of 12,000 sf.

Processing Operation (e.g., nuclear construction)

KPP #1. Include high-bay area that includes 50% open space to accommodate additional equipment in the future.

KPP #2. Provide a processing capability of at least 5 gpm.

KPP #3. Provide above-ground storage capacity of 50,000 gallons of feedstock.

KPP #4. All gloveboxes will be designed and fabricated to NQA-1 standards.

KPP #5. The reactor will be capable of attaining 1400 ºF within 12 hours.

Science Project (e.g., high energy physics)

KPP #1. Upgrade the accelerator complex from 400 kilowatts (kW) to 700 kW of beam power.

KPP #2. Construct a 222-ton Near Detector.

KPP #3. Construct a Far Detector Experiment Hall in Ash River, MN.

KPP #4. Construct a 15,000 ton (15 kiloton) NOνA Far Detector.

Groundwater Treatment

KPP #1. Install 200 monitoring wells along the river.

KPP #2. Install a pump and treat system capable of processing a minimum of 100 gpm.

KPP #3. Install 10 injection wells at a maximum spacing of 200 feet, and at a depth of 400-450 feet.

Waste Disposal Unit

KPP #1. Provide saltstone grout containment structure of 30 million gallons.

KPP #2. Install a single leak detection system in accordance with the Z-Area Industrial Solid Waste Landfill Permit requirements.

KPP #3. Provide infrastructure capable of delivering saltstone grout at a minimum of 100 gpm.

KPP #4. Construct a solid waste landfill of at least 10 acres that includes a 2-foot clay barrier topped with a geosynthetic membrane liner.

Decontamination and Decommissioning (e.g., an old nuclear processing building)

KPP #1. Decontaminate Building 300 to a radiation level no higher than 10 nanocuries/gm prior to demolition.

KPP #2. Demolish Building 300 to grade, leaving the main floor slab in place.

KPP #3. Package, ship, and dispose all low level waste in the Offsite Disposal Landfill.

KPP #4. Demolish the underground fuel tank, dispose of debris in a hazardous waste landfill, and backfill the excavation with borrow material to original grade level.

The following are examples of poorly worded or non-measurable KPPs.

Example	Deficiency
Meet code requirements.	Non-specific. Which codes?
Attract and retain a world-class research staff.	Not related to the performance of the facility. Not measurable at CD-4.
Meet or achieve "safe design" concepts and safe work environment.	Non-specific. What are the parameters for "safe design"?
Maximize the ease of maintenance in the high-bay area.	Non-specific. How do you measure "ease"?
Incorporate design that is contextual and harmonious with the existing facility	Non-specific. Too much judgment involved. What may be harmonious to one person may not be harmonious to another.

Treat the waste within 15 months and subsequently, newly-generated liquid waste	Cannot be measured by CD-4.
Minimize secondary waste generation	Non-specific. How much is minimum?
Provide capability for future calcine packaging and treatment if necessary.	Beyond CD-4. Not relevant to current project.
Provide close stewardship of Federal dollars	This is merely a good management practice, but is non-specific.
Apply cost controls to obtain appropriate balance and value.	Non-specific. This is merely a good management practice. How do you define "appropriate"?

APPENDIX B: ACRONYMS[4]

AE	acquisition executive
BCP	baseline change control
CD	critical decisions
DEAR	Department of Energy Acquisition Regulation
DOE	U.S. Department of Energy
EVMS	earned value management system
FAR	Federal Acquisition Regulation
FPD	federal project director
IPT	integrated project team
KPP	key performance parameter
PARS	Project Assessment Reporting System
PB	performance baseline
PDS	project data sheet
PEP	project execution plan
PPEP	preliminary project execution plan
PWS	Performance Work Statement
RLS	resource-loaded schedule
SOW	statement of work
TPC	total project cost
WBS	work breakdown structure

[4] Definitions for these terms can be found in the OAPM Glossary of Terms Handbook.

APPENDIX C: REFERENCES

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